PATENT

IN THE UNITED STATES PATENT AND TRADEMARI OFFICE

INVENTOR(S)	:	Sharma et al.
TITLE	:	**SYSTEM AND METHOD OF HALFTONING FOR MULTI-PASS RENDERING**
APPLICATION NO.	:	10/044,468
FILED	:	January 11, 2002
CONFIRMATION NO.	:	9895
EXAMINER	:	Thompson, James A.
ART UNIT	:	2625
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REPLY BRIEF UNDER 37 C.F.R. §41.41

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is being filed within two months of the August 8, 2007 mailing of the Examiner's Answer in the Appeal of the above-identified patent application.

CERTIFICATE OF ELECTRONIC TRANSMISSION

I hereby certify that this paper and/or fee is being transmitted to the USPTO by electronic transmission via EFS-Web on the date indicated below.

Roseanne Giuliani

Roseanne Giuliani

Date: October 9, 2007

Reply to Section (10) --Response to Arguments—(of the Examiner's Answer)

Referring now to part (10), the Examiner's Response to Argument. Regarding the Examiner's answer to Section A.1, Appellant again respectfully submits that the Examiner is not accurately describing the teaching of Gotoh. The Examiner describes how Gotoh teaches multi-pass rendering using a "checkerboard" pattern and an "inverse checkerboard" pattern as shown in Figure 21A. The Examiner states that, in this example, a 25% tone level is rendered by printing one-quarter of the overall number of positions in one pass, namely the "checkerboard pattern" pass. So that in a two-pass system, one pass is needed to print a 25% tone level and this one pass is the minimum number of passes required to produce the tone. The Examiner further states that by printing a 25% tone level in one pass, Gotoh restricts a substantial majority of pixels turned on to render a tone. Specifically, the Examiner states, 75% of the pixels are restricted, the restricted pixels composed of all of the pixels in the "inverted checkerboard" pass and half of the pixels in the "checkerboard" pass.

Appellant respectfully submits that Gotoh does not teach rendering a 25% tone level in this example. Gotoh may discuss printing 25% of the total number of pixels in a single pass, but this is not a 25% tone level, as is known in the art. Rather, this is 25% of the total tone. To produce a 25% tone level in an image area, 75% of the pixels in that image area are not turned on, are not printed, upon completion of all of the passes. Appellant, therefore, respectfully submits that Gotoh does not teach restricting a substantial majority of pixels turned on to render a 25% tone level to the single pass of Figure 21A. If this were the case for the multi-pass system of this example, Gotoh would have to discuss that only a substantial minority of the pixels turned on to render the 25% tone level are included in the second pass, and it does not. Thus, Gotoh does not teach the restricting step as claimed.

Regarding the Examiner's answer to Section A.3, the Examiner puts forth a hypothetical situation which Gotoh does teach or suggest. Gotoh does not teach a method of halftoning in which a tone of 1.5625% or less will be printed with only a single nozzle, or in only a single pass. Further, Examiner's hypothetical does not concern a method of halftoning, but rather a method of printing, which is not claimed. Using a

single nozzle in this manner would produce a line, perhaps, but this does not concern digital halftoning which controls the printing of tonal spots, where spatially averaging the printed spots of one or more tonal separations provides the illusion of the required continuous contone (tone) as described in the Appellant's specification, and as claimed.

Regarding the Examiner's answer to Section A.4, the Examiner rejected claim 25 under 35 U.S.C. 102(e) as being anticipated by Gotoh. Claim 25 claims a method of generating a stochastic halftone screen. The Examiner stated "'generating a stochastic halftone screen for multi-pass rendering' is a portion of the preamble of the claim. The phrase 'generating a stochastic halftone screen' does not substantially relate to the positively recited steps of claim 25."

Appellant respectfully submits, as recited in MPEP 2111.02, "if the claim preamble is 'necessary to give live, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." Gotoh does not teach a method of generating a stochastic halftone screen. The halftone screens taught by Gotoh are dot concentration and dot dispersion clustered dot halftone screens (see paragraph [0074], among others) as is known in the art of halftoning, not stochastic halftone screens. Thus, Gotoh does not anticipate claim 25.

Regarding the Examiner's answer to Section A.6, the Examiner noted that claim 28, being a single means claim, has been held unduly broad (see MPEP 2164.08(a)). Appellants maintain that this section refers to rejections made under 35 U.S.C. §112. No 35 U.S.C. §112 rejection of Claim 28 was made. Further, Appellants submit several embodiments were disclosed on pages 17 and 18 making such a rejection improper.

Regarding the Examiner's answer to Section B.1, the Examiner stated "In Gotoh, the checkerboard pattern and reverse-checkerboard pattern are also used in rendering tones, wherein the checkerboard pattern is printed in the first pass for the lowest tone values (and thus with the lowest halftone screen turn-on sequence)". Examiner has not indicated where, in the specification, Gotoh teaches this.

Appellant respectfully submits that Gotoh does not teach or suggest that the lowest turn-on sequence values are printed in a first pass and the highest values are printed in a second pass. Further, the second embodiment of Gotoh, which discusses

multi-pass printing, (see paragraphs [0067]-[0082], including specifically paragraph [0069] denoting this example as multi-pass), does not teach or suggest this.

As described in paragraph [0081], Gotoh teaches scattering the dots to make uniform the frequencies with which individual recording elements are used. This does not teach or suggest the invention as claimed in claims 4-10. Appellant further maintains Gotoh teaches away from the invention as claimed in claims 4-10 by seeking to use the print nozzles uniformly.

CONCLUSION

In view of the above amendments, comments, and arguments presented, applicants respectfully submit that all pending claims are patentably distinct and unobvious over the art of record.

Allowance of all pending claims and early notice to that effect is respectfully requested.

Respectfully submitted,

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